

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

1-8. (Canceled)

9. (Currently Amended) A heat-sealing device which ~~moves a tube shaped packaging material, formed from a packaging material web and filled up with liquid food under a liquid surface of the liquid food, through operation of a seal jaw and a counter jaw, and transversely heat-seals the~~ a tube shaped packaging material, formed from a packaging material web and filled up with liquid food, in a seal zone of the tube shaped packaging material that contains a cutting predetermined zone through softening or melting of plastic material forming the packaging material, the heat-sealing device comprising:

a seal jaw and a counter jaw;

the seal jaw and the counter jaw both including an operation surface that faces and contacts the seal zone during transverse sealing under ~~the~~ a liquid surface of the liquid food, the operation surface of the seal jaw being a flat surface across its entire extent, the seal jaw heating the packaging material to soften or melt the plastic material so that the seal zone is coextensive with the flat operation surface of the seal jaw, the operation surface of the counter jaw including removal/mixture means for removing from the seal zone seal prevention impurity including the liquid food which may remain in the seal zone, ~~and/or~~ or mixing the seal prevention impurity

with the plastic material that has softened or melted, the removal/mixture means comprising at least two raised ridges or at least two chevron-shaped elements on the operation surface of the counter jaw.

10. (Previously Presented) The heat-sealing device of Claim 9, wherein the removal/mixture means is a sloped surface forming the operation surface of the counter jaw.

11. (Canceled)

12. (Canceled)

13. (Previously Presented) The heat-sealing device of Claim 9, including an inductor for high frequency induction heating that is arranged at the seal jaw, and the packaging material comprises a metal thin layer and a thermoplastic material innermost layer.

14. (Previously Presented) The heat-sealing device of Claim 9, including a horn for forming the seal zone by ultrasonic heating that is arranged at the seal jaw, and the packaging material includes at least a thermoplastic material innermost layer.

15. (Previously Presented) The heat-sealing device of Claim 9, including a resistance body for forming the seal zone by heating that is arranged at the seal jaw,

and the packaging material includes at least a thermoplastic material innermost layer.

16. (Currently Amended) A heat-sealing device which transversely seals a tube shaped packaging material filled up with liquid food ~~under a liquid surface of the liquid food~~ to form a seal zone of the tube shaped packaging material through softening or melting of plastic material forming a part of the tube shaped packaging material, comprising:

a seal jaw and a counter jaw positioned in opposition to one another, the seal jaw including means for effecting softening or melting of the plastic material forming a part of the tube shaped packaging material, the seal jaw and the counter jaw both including an operation surface that faces and contacts the seal zone during transverse sealing ~~under the~~ a liquid surface of the liquid food, the operation surface of the seal jaw being a flat surface across its entire extent, the seal jaw heating the packaging material to soften or melt the plastic material so that the seal zone is coextensive with the flat operation surface of the seal jaw, the operation surface of the counter jaw being formed with at least two raised ridges or at least two chevron-shaped elements to remove seal prevention impurity including the liquid food which may remain in the seal zone, ~~and/or~~ or to mix the seal prevention impurity with the softened or melted plastic material.

17. (Previously Presented) The heat-sealing device of Claim 16, wherein the operation surface of the counter jaw is formed as a sloped surface.

18. (Canceled)

19. (Previously Presented) The heat-sealing device of Claim 16, wherein the means for effecting softening or melting of the plastic material forming a part of the tube shaped packaging material includes an inductor for high frequency induction heating.

20. (Previously Presented) The heat-sealing device of Claim 16, wherein the means for effecting softening or melting of the plastic material forming a part of the tube shaped packaging material includes a horn for forming the seal zone by ultrasonic heating.

21. (Previously Presented) The heat-sealing device of Claim 16, wherein the means for effecting softening or melting of the plastic material forming a part of the tube shaped packaging material includes a resistance body for forming the seal zone by heating.

22. (Currently Amended) A filling machine for ~~advancing a packaging material web~~, forming the an advancing packaging material web into a tube shaped packaging material, filling up liquid food in the tube shaped packaging material, and transversely heat-sealing the tube shaped packaging material in a seal zone of the packaging material containing a cutting predetermined zone through softening or melting of plastic material forming the packaging material, comprising:

a heat-sealing device for forming the seal zone, the heat sealing device comprising a seal jaw and a counter jaw that both include an operation surface facing and contacting the seal zone during transverse sealing under the liquid surface of the liquid food, the operation surface of the seal jaw being a flat surface across its entire extent, the seal jaw heating the packaging material to soften or melt the plastic material so that the seal zone is coextensive with the flat operation surface of the seal jaw, the operation surface of the counter jaw including removal/mixture means on the operation surface of the counter jaw for removing from the seal zone seal prevention impurity which may remain in the seal zone, ~~and/or~~ or mixing the seal prevention impurity including the liquid food with the plastic material that has softened or melted, the removal/mixture means comprising at least two raised ridges or at least two chevron-shaped elements on the operation surface of the counter jaw.

23. (Previously Presented) The filling machine of Claim 22, wherein the removal/mixture means is a sloped surface forming the operation surface of the counter jaw.

24. (Canceled)

25. (Canceled)

26. (Previously Presented) The filling machine of Claim 22, including an inductor for high frequency induction heating that is arranged at the seal jaw, and the

packaging material comprises a metal thin layer and a thermoplastic material innermost layer.

27. (Previously Presented) The filling machine of Claim 22, wherein a horn for forming the seal zone by ultrasonic heating that is arranged at the seal jaw, and the packaging material includes at least a thermoplastic material innermost layer.

28. (Previously Presented) The filling machine of Claim 22, including a resistance body for forming the seal zone by heating that is arranged at the seal jaw, and the packaging material includes at least a thermoplastic material innermost layer.

29. (New) The heat-sealing device of Claim 9, wherein the removal/mixture means removes from the seal zone seal prevention impurity including the liquid food which may remain in the seal zone and mixes the seal prevention impurity with the plastic material that has softened or melted.

30. (New) The heat-sealing device of Claim 16, wherein the operation surface of the counter jaw is formed with the at least two raised ridges or the at least two chevron-shaped elements to remove seal prevention impurity including the liquid food which may remain in the seal zone, and to mix the seal prevention impurity with the softened or melted plastic material.

31. (New) The filling machine of Claim 22, wherein the removal/mixture means on the operation surface of the counter jaw removes from the seal zone seal prevention impurity which may remain in the seal zone, and mixes the seal prevention impurity including the liquid food with the plastic material that has softened or melted.